Oak Creek Valley Community

Evacuation Route Plan

Prepared by Ann Eissinger, Oak Creek Valley Evacuation Committee 12/4/2020

This document was prepared for consideration by Benton County and the Benton County Board of Commissioners as a template for emergency evacuation route planning for the Oak Creek Valley Community, Corvallis Oregon 2020.

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Oak Creek Valley Community - Evacuation Route Plan

Purpose

Citizens of the Oak Creek Valley, Benton County Oregon, have been working with local and state agencies since 2018 to plan and prepare for wildfire. As part of that process, the community has formed a committee to review existing escape options, identify alternative routes, and develop an Emergency Evacuation Plan.

The Evacuation Route Plan is the first step in overall evacuation planning. This plan addresses the need for added evacuation routes based on limited egress, location, topography, residential concentrations, power corridors and abundant fuels. The plan also identifies the routes to most effectively serve this community in the event of an emergency need to evacuate.

The identification of evacuation routes and recommendations in this plan for the Oak Creek Valley are a result of community discussions, planning document review (CWPP/traffic records), neighborhood assessment, and on-site visits. Conversations with agency representatives, large property owners and managers also provided guidance.

This plan serves as a template for formalizing evacuation routes in the Oak Creek Valley, with the goal to provide escape routes for the whole community. The evacuation route plan is one component of the overall evacuation planning process for this community, which will include: evacuation routes, neighborhood organization and communication, agency coordination, evacuation protocol development and community outreach/education.

Setting

The Oak Creek Valley is located immediately west of the city of Corvallis, Benton County Oregon (Figure 1). Oak Creek Valley is a 7730 acre basin which rises 1,841 feet from the valley floor. The basin is dominated by conifer forest cover in the upper basin and a mix of conifer/oak forest and field in the mid-lower basin area. Although average precipitation in Corvallis is 44+ inches per year, during the summer months there is negligible precipitation most years, creating fire-prone conditions.

Land use in the basin includes residential, forestry, agriculture, and recreation. Land ownership is a mix of private and public. The largest landowners with >100 acres include: the State of Oregon/Oregon State University, Starker Forest, Greenbelt Land Trust, Crestmont Farms LLC, Benton County, the Brandis family, City of Corvallis, and the Martin family. The remaining properties are smaller private holdings, and are mostly residential.





★ Firewise neighborhoods

The Oak Creek Valley is situated within the Corvallis Rural Fire Protection District (CRFPD) and Western District of Oregon Department of Forestry (ODF). Both are taxing districts. Structural fire suppression and medic services are provided by Corvallis Fire Department under contract with the CRFPD. Wildland fire response is a coordinated effort. Fire suppression infrastructure within the valley is limited to one 28,000 gal. water tank/draft site located near the entry to the OSU Sheep Farm off of Oak Creek Dr. A second tank was approved for construction in the Chinook neighborhood by the CRFP in December 2020.

The Oak Creek Valley residential community is made up of about 370 households, loosely clustered within 10 neighborhoods (Figure 1), with an estimated population of 1,100. Three of these neighborhoods are active in Firewise. This community is within the wildland-urban-interface or WUI. Forested WUIs areas such as Oak Creek Valley are high risk for wildfire.

The primary public ingress and egress for the valley is Oak Creek Drive. This roadway follows the Oak Creek stream corridor along the valley floor 3.1 miles from 53rd Street to McDonald Forest where the road dead ends. There is also a primary power corridor with overhead lines and a substation. Total elevation gain along this route is about 250 ft. From 53rd St. to the Cardwell Hill Dr. junction, the roadway is paved with two travel lanes. It is 25 feet wide with 5-foot bike lanes on each side for a total width of 35 feet. From Cardwell Hill Dr. to McDonald Forest, Oak Creek Dr. narrows to about 22 feet and has no shoulder to its terminus. This road is maintained by Benton County.

In addition to Oak Creek Drive, there are an estimated 20 miles of side roads and driveways within the community. These roadways are a mix of paved and gravel and are maintained by neighborhood road districts, homeowner associations or informal homeowner groups. These roads are generally relatively narrow and some are built on steep slopes.

As a community with 370 households spread throughout the valley with limited public roadways and only one road access, evacuation planning is essential for this community to survive a major disaster such as wildfire.

Leadership and Stakeholders

Since 2018, the Oak Creek Valley Community has been working together to address emergency response, particularly for wildfire. With support from Corvallis Fire Department, Benton County, and the Oregon Department of Forestry, the citizens of Oak Creek Valley worked together to become more informed about wildfire and to take preparedness action.

In a volunteer effort, the community has organized, setting up a communication network to link neighborhoods, large land owners, and land managers. For organizational purposes, the community was divided into 10 neighborhoods. Each neighborhood has a designated representative and communication network that includes large land owners and agency representatives.

Meetings of the representatives were held to discuss organization, fire and emergency concerns. Subsequent meetings were held for each neighborhood to provide some education on fire mitigation and emergency preparedness. To better understand the concerns of the residents, each meeting provided an opportunity for participants to ask questions and share concerns. Overwhelmingly the number one concern voiced by the residents of Oak Creek Valley was escape from wildfire, particularly evacuation routes and the need for an evacuation plan.

In 2019, a citizen Evacuation Committee formed to represent the Oak Creek Valley Community and address concerns about evacuation. The Committee identified the inadequacy of the existing egress out of the valley and identified evacuation route needs and improvements. As a result, the Committee has proposed several improvements to provide the community with evacuation alternatives, which forms the bases of this plan. Complete descriptions of proposed routes and improvements were presented to stakeholders in 2019.

In order to establish added evacuation routes or make improvements, the unincorporated community of Oak Creek Valley required a lead agency and representative. Benton County was identified as the lead agency, and Bryan Lee of Benton County Sheriff Emergency Services was named as the community representative. Dave Busby of Corvallis Fire Department serves as an emergency response adviser and Allison Blair of Oregon Department of Forestry (ODF) provided Firewise education community wide, although she has since left the area. Ann Eissinger is acting as the volunteer community coordinator and has prepared a draft Community Wildfire Preparedness Plan Background Document in addition to this plan.

Benton County Community Wildfire Preparedness Plan (CWPP)

The need for additional emergency egress from the Oak Creek Valley was identified in the 2009 and 2016 Benton County Community Wildfire Preparedness Plans (CWPP). The 2009 plan identified six evacuation projects for the Oak Creek Valley (Figure 2). Of the projects listed, cost estimates were included for some, but no actual funding sources or responsibilities were listed.

Of the projects identified in the 2009 CWPP, one was completed. The Cardwell Hill/Panorama/Fitton Green evacuation route was established using the existing roads which

merge into one route to the west of Oak Creek using Cardwell Hill Drive as the main route (Figure 2 - #1,6,7).

The Fitton Green route was improved in 2019-2020 using Benton County Capital Improvement Projects Funding through Open Space and Parks, costing \$53,000 including some in-kind material contributions. This route primarily serves the Chinook and Cardwell Hill neighborhoods with evacuation to the west, and the Community of Wren which would use it for an evacuation route east. In a large-scale wildfire event, this shared east and west evacuation single track evacuation route could be problematic.





Evacuation Route Review and Considerations

As stated earlier, the current public ingress and egress for the Oak Creek Valley is one road, Oak Creek Drive. Not only is Oak Creek Dr. a potentially restrictive egress in the event of a major emergency, but considering the location, distance of travel, capacity and terrain of the alternative Cardwell Hill/Fitton Green, the relief provided by these routes is self-limiting.

When reviewing evacuation of the Oak Creek Community from a neighborhood perspective, each neighborhood location, configuration and exit options need to be considered. Due to older development standards many neighborhood housing clusters have only one exit. Those exits in most cases are narrow side roads, some of which are gravel and/or steeply sloped. So, not only is Oak Creek Drive a bottle neck, but each neighborhood may also have exit limitations.

To understand each neighborhood size and exit capacity, the following table was prepared to inform the planning process.

Table 1 Lyress by Neighbol 1000 - Oak creek valley						
Neighborhood*	#Homes**	# Exits	Exit name(s)	Destination		
Ridgewood	54	1	Ridgewood Dr.	Oak Cr Dr - Corvallis		
Oakwood Heights	32	1	Cardwell Hill Dr.	Oak Cr Dr - Corvallis		
Chinook	72	3	Cardwell Hill Dr.,	Oak Cr Dr - Corvallis		
			Cardwell Hill Evac. Rt. west	Wren		
			Fitton Green Evac. Rt. west			
Cardwell Hill	38	2-3	Cardwell Hill Dr.	Wren		
			Canyon Dr.	Oak Cr Dr- Corvallis		
			Carwell Hill Evac. Rt. west	Wren		
Skillings	30	1	Skillings Dr.	Oak Cr Dr - Corvallis		
Upper Oak Creek	65	1				
Includes:						
McDonald Forest Estates,			Tanager	Oak Cr Dr - Corvallis		
Hope Ln.			Hope Ln.	Oak Cr Dr - Corvallis		
upper Oak Creek Dr.			Oak Cr Dr	Oak Cr Dr- Corvallis		
Grandview – West	34	1-2	Grandview Dr. – 2 exits	Oak Cr Dr- Corvallis		
Includes 4 households on						
Oak Creek Dr.						
Grandview – Upper East	9	2	Grandview Dr. – 2 exits	Oak Cr Dr- Corvallis		
Grandview – Lower East	11	1-2	Grandview Dr. – 2 exits	Oak Cr Dr- Corvallis		
Oak Creek Dr.	23	1	Oak Cr Dr	Oak Cr Dr- Corvallis		
4						

Table 1	Egress	y Neighborhood – Oak Creek Valley
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*Neighborhoods are listed as organizational units for Oak Creek Valley Fire Preparedness Planning. **Data from Benton County GIS

Note: for some households, the number of exits depend on their location within the neighborhood.

Based on the table provided, the number of households per number of exit options includes:

- 1 exit = 204 households
- 1-2 exits = 45 households
- 2-3 exits = 119 households

Currently, if all of the Oak Creek residents utilized Oak Creek Drive as their primary evacuation route out of the valley, that would result in an estimated 663 vehicles (1.8 vehicles per household) attempting to use Oak Creek Dr. at one time. However, if Chinook and half of Cardwell Hill neighborhoods utilized the Cardwell Hill/Fitton Green evacuation route, that would reduce the traffic an estimated 24% or to 504 vehicles on the roadway at one time. In emergency conditions, at night and/or in heavy smoke the evacuation of this many households on to a single roadway could be problematic. Also, in the event Oak Creek Dr. is blocked, the western route would be overwhelmed. Therefore, additional emergency egress from Oak Creek Valley needs to be addressed.

Oak Creek Valley Community Planning

During the 2019 review of evacuation options by the Oak Creek Valley Evacuation Committee, existing evacuation routes were reviewed, and it became clear that the community needed additional escape alternatives in order to serve all neighborhoods. Technical tools such as an emergency evacuation model would be very useful for this task, but was not made available, so we relied on traffic data from Benton County, evaluated existing roads, trails and identified right-of-ways. In addition, high risk areas with high voltage powerlines and the substation were also considered.

The immediate goal was to identify viable escape routes in all four directions out of the valley. From this process, the committee identified four routes, two for emergency egress/evacuation and two for either evacuation and/or possible overflow from lower Oak Creek Dr.

In an effort to formalize the use of the four routes selected for emergency evacuation, the Oak Creek Valley Community has asked Benton County to work with property owners and managers to develop agreements in the form of Memorandum of Understanding (MOU) to make official each route, its access, and involve all parties in the process of evacuation planning for the Community. It is the goal of the Community to establish an evacuation plan and protocol, which includes clearly identified exit routes and directions for accessing and navigating each route. Involvement and cooperation with both land owners and land managers has been integral in this process.

Figure 3 Oak Creek Existing and Proposed Evacuation Routes



Following are descriptions of both established and proposed evacuation routes for the Oak Creek Valley.

ESTABLISHED EVACUATION ROUTES

The primary evacuation route for the Oak Creek Valley is Oak Creek Dr., a two-lane paved roadway that currently serves the whole community as the single ingress/egress route. In the event that Oak Creek Dr. is unusable the only other existing evacuation route is to the west via Cardwell Hill Drive.

Cardwell Hill / Fitton Green

The Cardwell Hill/Panorama/Fitton Green evacuation routes are actually one route with two entrance points (Figure 3); one entry at the end of Cardwell Hill Drive, and one at the end of Panorama Dr. The Cardwell Hill route is an extension of Cardwell Hill Dr. west to Wren a total of 3.0 miles gate to gate, or 4 miles from Oak Creek Dr. to the western gate. The Panorama Dr. route runs through Fitton Green then doubles back to merge with Cardwell Hill trail 1.25 miles from the upper gate and 4.00 miles from Oak Creek Dr. Overall the Cardwell Hill route continues west, down slope to Mary's River then follows Cardwell Hill Dr. west to Hwy 223, an overall total of 5.7 miles from Oak Creek Dr. These evacuation routes are through forest with some steep slopes.

Due to the location of these routes they primarily serve 2 neighborhoods, Chinook and Cardwell Hill with about 100 households.

Both routes are gated single-lane gravel roads used as trails and maintenance access for adjacent land owners. The gates on these routes are locked and limited to Benton County Sheriff, Benton County Public Works, ODF and landowners. Evacuees are instructed to dial 911 to access the lock combinations in order to open the gates. This is considered problematic, and an alternative to calling 911 is needed in the event that the phones are down or dispatch is overwhelmed.

Overall, these current evacuation routes are both located well off Oak Creek Dr. on the western edge of the Community. Both routes are relatively long, run through forest, and have limited service area and capacity.

PROPOSED EVACUATION ROUTES

In order to provide evacuation options to a larger number of residents throughout the community and provide options for unpredictable conditions, two routes out of the Oak Creek Valley were identified one to the north and one to the east (Figure 3), which are:

- 1. OSU Sheep Farm to Ponderosa Ave. (east)
- 2. McDonald Forest Rd #600 to Sulphur Springs Road. (north)

Both of these proposed routes run through OSU-managed lands and would require a cooperative agreement or between OSU and the lead agency for the Oak Creek Community which is Benton County, specifically Benton County Emergency Services. Descriptions of the proposed routes are as follows.

OSU Sheep Farm to Ponderosa Ave. (Ponderosa Connector)

The OSU Sheep Farm to Ponderosa Ave. proposed emergency egress would provide evacuation to the east from Oak Creek Drive to Corvallis (Figure 4). This route utilizes the existing OSU access road from 7565 Oak Creek Drive, to the OSU sheep barn, from where a road connector is needed to reach the right-of-way with Ponderosa Avenue at the Corvallis City Limits. This route would be 1 mile in total length, gate-to-gate (Oak Creek Dr. to Ponderosa Ave.) through open field terrain. The route would then allow evacuees to follow Ponderosa Ave. through the Skyline West development to Walnut Blvd. in Corvallis. This route would provide the shortest and most open evacuation route out of the Valley.

The central location of this proposed evacuation route, would service 4-5 neighborhoods including: Grandview West, Oakwood Heights, Cardwell Hill and Skillings with about 144 households, and an additional 75 households from upper Oak Creek and Oak Creek also potentially using this route depending on conditions, for a combined total of 219 households or 55% of the community benefiting from this route.

From Oak Creek Dr., the current access into the OSU Sheep Farm is a well maintained 12' wide gravel road extending about 4,080 ft. to sheep barn where the road currently ends. The remaining 1,500 ft. to Ponderosa Ave. would require the construction of a gravel connector road across open pasture. The route would follow a gentle slope to the crest of the hill, then drops an estimated 15% slope for the last 300 feet or so to Ponderosa Ave. Near the hill crest, the road would follow the northern property boundary under the Consumer Power feeder line and past a private lane providing emergency egress for a neighboring property. There is a fence

and a few trees at the end of Ponderosa Ave. that would need to be removed and a gate installed. The route would need to be engineered, graded and surfaced for it to be safe and passable for passenger vehicles. This route is intended for emergency use only.

This route was a previously proposed evacuation route and secondary egress for the Skyline West neighborhood (CWPP 2016). However, a second egress was instead built by extending Fair Oaks Drive east from Skyline to Walnut Blvd. in 2019. That said, the Skyline West neighborhood has expressed interest in the proposed connector.



Figure 4 Sheep Farm – Ponderosa Ave. Connector Route

Proposed Evacuation Route: Entry point from 7565 NW Oak Creek Dr. Corvallis – OSU Sheep Farm. New connector road (red) from Ponderosa Ave. to OSU Sheep Farm access road to Oak Creek Drive. Total new construction about 1,500 ft. (red). Total route length 1 mile. Total elevation gain ~260 ft. from Oak Creek.

In 2019 the Oak Creek Community Evacuation Committee organized a site visit to review the project with representatives from OSU, Benton County Emergency Services and Corvallis Fire Department. The meeting was a success in bringing the stakeholders together and agreeing in principle on the evacuation route. Since the property is owned by OSU its use requires a formal agreement. OSU drafted an MOU in September 2019 which was sent to Benton County for review. The MOU needs to be finalized in order to move forward with this project.

Subsequent discussions with the Benton County Administrator and Public Works official resulted in a cost estimate for the project which ranged from \$386,000 to \$468,000 depending on width of the roadway and contingencies.

It is requested that Benton County serve as the lead agency for this project, and provide project management, permitting, design and engineering.

Proposed funding for this project would be through a public-private cost share. Efforts to secure funding and finalize the MOU are being pursued with the goal to start the project prior to or during the 2021 fire season if possible.

This is the only proposed evacuation route that would require any construction or out-of-pocket cost.

McDonald Forest #600 Road

The OSU McDonald Forest #600 Road would provide evacuation to the north, from the end of Oak Creek Drive to the Lewisburg Saddle at Sulphur Creek Road (Figure 3). This route is an active gravel logging road, 5.2 miles long, which runs through forested and occasionally steep terrain. Although this route is well maintained for trucks and heavy equipment, in the event that a logging operation is situated on or near the road, it could become blocked or the surface compromised, limiting use by passenger vehicles. The route is gated at both ends with multiple locks.

Oak Creek Valley community discussions with OSU College of Forestry began in 2019. With a mutual willingness to move forward, an MOU was drafted by Benton County Sherriff/Emergency Services and presented to OSU for consideration. Since June of 2019 the MOU has been at the OSU Property and Real Estate division without movement.

Alternatives to Lower Oak Creek Drive

In addition to the routes listed above for the upper Oak Creek Valley, in the event that lower Oak Creek Drive is blocked or backed up, 2 alternate emergency routes have been identified. Both of these are illustrated in Figure 3.

• Bald Hill Trail – Oak Creek Dr. to Benton County Fairgrounds/Reservoir Rd. This is a Corvallis City owned and maintained park area. The trail connector is paved and wide enough for a single vehicle. An MOU is needed to formalize emergency use. Bald Hill Farm – Greenbelt Land Trust – Farm Access Road from Oak Creek Drive to Rosecrest Drive to West Hills Drive
This is a private, gated, single lane, gravel access road owned by the Greenbelt Land
Trust. Preliminary discussions with GLT have been positive. An MOU with GLT and one
property owner is needed to formalize emergency use.

Other alternative evacuation routes have also been suggested. These include a poorly defined second route from Fitton Green to Worthway or Dawnwood Drives or the GLT access road, and a route following an abandoned access road from Wynoochee Dr to Oak Creek Dr. These both involve crossing private properties and would require expensive improvements. The benefits for these routes would also need to be evaluated.

For the time being it is recommended that the proposed evacuation routes and improvements be completed before adding others. However, further evaluation may be needed to determine if other routes are needed to serve this community, or to connect neighborhoods with limited egress.

All of the routes identified for evacuation are intended for emergency use only and will not be opened for public access unless they are already designated as such.

Funding and Support

As of December 2020 the Oak Creek Valley Evacuation Committee has been working through our representative Bryan Lee with the Benton County Sherriff Department/Emergency Services to secure MOU's with the following entities for the proposed routes, including:

- 1. OSU College of Forestry McDonald Forest #600 Road
- 2. OSU College of Agriculture OSU Sheep Farm Ponderosa Ave. Connector
- 3. Greenbelt Land Trust GLT Access Road
- 4. City of Corvallis Bald Hill Park Trail

The only proposed evacuation route that requires funding for improvements is the OSU Sheep Farm – Ponderosa Ave. connector. The Evacuation Committee searched for possible funding, both public and private. As a result, three potential funding sources were identified, including Benton County, Corvallis Rural Fire Protection District (CRFPD) and the Benton County Community Foundation (BCCF). Both Benton County and CRFPD are recipients of tax revenue from the community and were therefore logical funding partners. The BCCF has offered assistance through a private contribution. A three-way cost share has been proposed. The Oak Creek Valley Community has formally requested funding from the CRFPD and the request is being considered. The request presented to the CRFPD Board of Directors 11/24/2020 was for a contribution of 1/3 the actual project cost, not to exceed \$150,000. Any funding agreement would need to be formalized with Benton County.

A request for funding and support from Benton County will be presented to the Benton County Board of Commissioners December 8, 2020. The request will include that Benton County be the lead agency and signatory on the MOU, and provide 1/3 cost-share as in-kind support. The primary goal is to secure funding and start the project prior to the 2021 fire season if possible.

Recommendations

The Oak Creek Valley Community has been working on fire preparedness since 2018. Evacuation has been the number one concern by the residents of this community. Due to the single dead-end road servicing this area, we are recommending that emergency evacuation routes be defined and formalized per this plan. Specific recommendations include the following:

- Continue planning process in cooperation with Benton County, Benton County Sheriff/Emergency Services, Corvallis Fire Department and other stakeholders.
- Gain support and involvement from Corvallis Rural Fire Protection District.
- Present plan to, and gain support from, the Benton County Board of Commissioners.
- Finalize MOU's to formalize use of described evacuation routes.
- Secure funding for the Sheep Farm Ponderosa connector emergency egress.
- Complete Ponderosa connector prior to 2021 fire season if possible.
- Identify signage needs and placement.
- Define gate keepers and at least 2 options for emergency gate opening.
- Create community evacuation maps and route information for residents and first responders.
- Develop a detailed evacuation plan and protocol for the community.
- Provide community evacuation education.
- Conduct a community evacuation drill in May 2021.

With this plan it is our hope that the Oak Creek Valley Community will forge a path for active wildfire preparedness and response. We are counting on all concerned to get involved, provide support where needed and help save lives.

Thank you.

For more information, questions or to make comments, please contact: Ann Eissinger Oak Creek Valley Fire Preparedness Coordinator (volunteer)

ATTACHMENTS

- Route Table
- Route Specifications

ROUTE TABLE

Route Name	Route/Destination	Type/ Current Use	Terrain	Ownership	Distance Gate to Gate	Entry Distance From Oak Creek Dr	Service Area*	Notes/Action Needed
EXISTING ROUTES								
Cardwell Hill	Oak Cr Dr to Hwy 223 (5.7mi. total)	1-lane Gravel/dirt rec trail	Forest w/ Steep portions	Public Benton Co	3 miles	1 mile	Chinook Cardwell	Shared with Wren Gated at both ends, requires 911 for access
Panorama/Fitton Green	Panorama Dr to Cardwell Hill (trail)	1-lane gravel rec trail	Forest w/ Steep portions switchback	Public Benton Co	2.9 miles	2.7 miles	Chinook	Shared with Wren Gated, requires 911 for access
PROPOSED ROUTES								
McDonald Forest #600 Rd.	Oak Cr Dr to Sulphur Springs Rd	1-lane gravel logging well maintained	Forest Elevation switchback	State of Oregon/ OSU	5.2 miles	0	Upper Oak Creek Skillings	Need MOU between Benton Co and OSU (in process) Gated w/ secured locks
Sheep Farm – Ponderosa connector	Oak Cr Dr to Ponderosa Ave Corvallis	1-lane gravel farm access/none	Open field sloped	State of Oregon/ OSU	1 mile	0	Grandview Oakwood Oak Creek Cardwell Skillings	Proposed route uses OSU access road and would require construction of a 1,500 foot connector
PROPOSED								
OAK CR DR BYPASS								
Bald Hill Farm	Oak Cr Dr to Rosecrest –West Hills Dr.	1-lane Gravel Farm access	Open Field Level-slight slope	Greenbelt Land Trust	1.25 mile	0	Ridgewood Oak Creek Overflow	Need MOU between Benton Co and GLT Resolve "spite-strip" at Rosecrest. Gated combination known
Bald Hill Trail	Oak Cr Dr to Reservoir Rd.	1-lane Paved Rec trail	Field/ forest level	City of Corvallis	1.5 mile	0	Overflow	Need MOU between Benton Co and City of Corvallis

ROUTE SPECIFICATIONS:

- **Cardwell Hill Drive** Oak Creek Dr. to Cardwell Hill Dive west to Marys River and Wren connecting with Hwy 223.
 - Length = 3 miles (gate to gate)
 - Distance from Oak Creek Dr.= 1 mile
 - Total length from Oak Creek Dr.= 4 miles
 - Total length from Oak Creek Dr. to Hwy 223 = 5.7 miles
 - Terrain = forested, east to west 366 ft elevation gain, 619 ft. decline, maximum grade 14%
 - Road = the evacuation route is single lane gravel/dirt road, muddy in winter narrow in places, linking paved portion of Cardwell Hill Drive both east and west
 - Publicly owned Benton County, managed by Benton County Public Works
 - Service area = would serve Oak Creek: Chinook, Cardwell Hill and Oakwood Heights neighborhoods, as well as the community of Wren
 - Use = multi-use non-motorized recreation, day use only.
 - Note: locked gates at both ends with signs reading "dial 911 for emergency access"
- Fitton Green connects Panorama Dr. to Cardwell Hill trail through open space park area.
 - Length = 1 mile from gate to merge with Cardwell Hill trail
 - Length (gate to gate) =
 - Distance from Oak Creek Dr. = 2.7 miles
 - Total Length from Oak Creek Dr. to Cardwell Hill trail = 3.7 miles
 - Total Length from Oak Creek Drive to Cardwell Hill Dr. = miles
 - Terrain = forested, east to west 495 ft decline, maximum grade -14%, one switchback
 - Road = single lane, resurfaced with gravel 8/2020
 - Publicly owned Benton County managed by Benton County Natural Areas and Parks Department
 - Service Area = would serve Chinook neighborhood
 - Use = multi-use non-motorized recreation, day use only.
 - Note: locked gate at the end of Panorama Dr. with signs reading "dial 911 for emergency access"
- McDonald Forest #600 Road links the end of Oak Creek Drive to Sulphur Springs Road.
 - Total length = 5.2 miles
 - Terrain = forest cover, 856' elevation gain from Oak Cr., 400' decline, 5% average grade, 9% maximum grade, 1 switch-back, curves, forest cover.
 - Road = existing well maintained gravel logging road
 - Publicly owned State of Oregon
 - Would directly serve: Upper Oak Creek residents
- **OSU Sheep Farm Connector** from Oak Creek Drive to Ponderosa Ave.
 - Total length = 1 mile
 - Terrain = 260' elevation gain, open field.

- Road = existing gravel access road
- \circ Identified in the 2009 CWPP
- Publicy owned Oregon State University/State of Oregon
- Would directly serve